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<120> Polymorphisms in the human CYP3A4 and CYP3A7 genes and
their use in diagnostic and therapeutic applications

<130> D 2145 PCT

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<141> 02002-03-08

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ctgtttttt cacacagc ttt tat gat ggt caa cag cct gtg ctg gct atc 111
 Phe Tyr Asp Gly Gln Gln Pro Val Leu Ala Ile
 1 5 10

aca gat cct gac atg atc aaa aca gtg cta gtg aaa gaa tgt tat tct 159
 Thr Asp Pro Asp Met Ile Lys Thr Val Leu Val Lys Glu Cys Tyr Ser
 15 20 25

gtc ttc aca aac cgg agg gtaagcattc atgtgttgaa attaaaatac 207
 Val Phe Thr Asn Arg Arg
 30

tgattgatta aatttatatt ttgaaattct tatatattca tagacagttg cctaaaaaat 267

gtccaggaag gtccacgtc cacttc 293

<210> 131
 <211> 33
 <212> PRT
 <213> Homo sapiens

<400> 131
 Phe Tyr Asp Gly Gln Gln Pro Val Leu Ala Ile Thr Asp Pro Asp Met
 1 5 10 15

Ile Lys Thr Val Leu Val Lys Glu Cys Tyr Ser Val Phe Thr Asn Arg
 20 25 30

Arg

<210> 132
 <211> 236
 <212> DNA
 <213> Homo sapiens

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<220>
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<400> 132

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g cct ttt ggt cca gtg gga ttt atg aaa agt gcc atc tct ata gct gag 109

Pro Phe Gly Pro Val Gly Phe Met Lys Ser Ala Ile Ser Ile Ala Glu

1 5 10 15

gat gaa gaa tgg aag aga tta cga tca ttg ctg tct cca acc ttc acc 157

Asp Glu Glu Trp Lys Arg Leu Arg Ser Leu Leu Ser Pro Thr Phe Thr

20 25 30

agt gga aaa ctc aag gag gtatgaaaaa aacatgagtt ttaataagaa 205

Ser Gly Lys Leu Lys Glu

35

acttaaagaa tgaatctggt ggggacaggt a

236

<210> 133

<211> 38

<212> PRT

<213> Homo sapiens

<400> 133

Pro Phe Gly Pro Val Gly Phe Met Lys Ser Ala Ile Ser Ile Ala Glu

1 5 10 15

Asp Glu Glu Trp Lys Arg Leu Arg Ser Leu Leu Ser Pro Thr Phe Thr

20 25 30

Ser Gly Lys Leu Lys Glu

35

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<222> (248)..(393)

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<222> (100)..(246)

<400> 134

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ggtgctgatt ttaatttcc acatctttct ccactcagc gtc ttt ggg gcc tac 114

Val Phe Gly Ala Tyr

1 5

agc atg gat gtg atc act agc aca tca ttt gga gtg aac atc gac tct 162

Ser Met Asp Val Ile Thr Ser Thr Ser Phe Gly Val Asn Ile Asp Ser

10 15 20

ctc aac aat cca caa gac ccc ttt gtg gaa aac acc aag aag ctt tta 210

Leu Asn Asn Pro Gln Asp Pro Phe Val Glu Asn Thr Lys Lys Leu Leu

25 30 35

aga ttt gat ttt ttg gat cca ttc ttt ctc tca ata agtatgtgga 256

Arg Phe Asp Phe Leu Asp Pro Phe Phe Leu Ser Ile

40 45

ctactatttc cttttattta tcttkctctc ttaaaaataa ctgctttatt gagatataaa 316

tcaccatgta attcatccac ttaaaatata cagttcagtg attttagta catttgaaga 376

tatgtgtgac catcatc 393

<210> 135

<211> 49

<212> PRT

<213> Homo sapiens

<400> 135

Val Phe Gly Ala Tyr Ser Met Asp Val Ile Thr Ser Thr Ser Phe Gly

1 5 10 15

Val Asn Ile Asp Ser Leu Asn Asn Pro Gln Asp Pro Phe Val Glu Asn

<210> 137
 <211> 22
 <212> PRT
 <213> Homo sapiens

<400> 137
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 1 5 10 15
 Glu Thr Glu Ser His Lys
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<210> 138
 <211> 399
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<220>
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 <222> (112)..(336)

<400> 138
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 aaagttaatt caaaaatctc aatttatcca aatctgtttc ttcttttca g gca cca 117
 Ala Pro
 1

ccc acc tat gat act gtg cta cag atg gag tat ctt gac atg gtg gtg 165
 Pro Thr Tyr Asp Thr Val Leu Gln Met Glu Tyr Leu Asp Met Val Val
 5 10 15

aat gaa acg ctc aga tta ttc cca att gct atg aga ctt gag agg gtc 213
 Asn Glu Thr Leu Arg Leu Phe Pro Ile Ala Met Arg Leu Glu Arg Val
 20 25 30

tgc aaa aaa gat gtt gag atc aat ggg atg ttc att ccc aaa ggg tgg 261
 Cys Lys Lys Asp Val Glu Ile Asn Gly Met Phe Ile Pro Lys Gly Trp
 35 40 45 50

gtg gtg atg att cca agc tat gct ctt cac cgt gac cca aag tac tgg 309
 Val Val Met Ile Pro Ser Tyr Ala Leu His Arg Asp Pro Lys Tyr Trp
 55 60 65

asa gag cct gag aag ttc ctc cct gaa aggtaggagg ccctgggaa 356
 Xaa Glu Pro Glu Lys Phe Leu Pro Glu
 70 75

gggagccctc cctgaaccag cctggttcaa gcatattctg cct 399

<210> 139
 <211> 75
 <212> PRT
 <213> Homo sapiens

<400> 139
 Ala Pro Pro Thr Tyr Asp Thr Val Leu Gln Met Glu Tyr Leu Asp Met
 1 5 10 15

Val Val Asn Glu Thr Leu Arg Leu Phe Pro Ile Ala Met Arg Leu Glu
 20 25 30

Arg Val Cys Lys Lys Asp Val Glu Ile Asn Gly Met Phe Ile Pro Lys
 35 40 45

Gly Trp Val Val Met Ile Pro Ser Tyr Ala Leu His Arg Asp Pro Lys
 50 55 60

Tyr Trp Xaa Glu Pro Glu Lys Phe Leu Pro Glu
 65 70 75

<210> 140
 <211> 21
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<220>

<223> Description of Artificial Sequence: artificial

<400> 140

ccagtatgag ttgttctctg g 21

<210> 141

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: artificial

<400> 141

aggcagaata tgcttgaacc aggc 24

<210> 142

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: artificial
sequence

<400> 142

gaagtggacg tggaaccttc ctggac 26

<210> 143

<211> 304

<212> DNA

<213> Homo sapiens

<400> 143

agtctggctt cctgggttgg gctccagctg tagaataagg ctgttgatgt ttaatcaact 60

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gacatgatca aaacagtgcg agtgaaagaa tgttattctg tcttcacaaa ccggagggta 180

agcattcatg tggtgaaatt aaaatactga ttgattaaat ttatatattg aaattcttat 240

atattcatag acagttgcct aaaaaatgtc caggaagggt ccacgtccac ttcactctgt 300

cccc

304

<210> 144

<211> 236

<212> DNA

<213> Homo sapiens

<220>

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<400> 144

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g cct ttt ggt cca gtg gga ttt atg aaa agt gcc atc tct ata gct gag 109

Pro Phe Gly Pro Val Gly Phe Met Lys Ser Ala Ile Ser Ile Ala Glu

1 5 10 15

gat gaa gaa tgg aag aga tta caa tca ttg ctg tct cca acc ttc acc 157

Asp Glu Glu Trp Lys Arg Leu Gln Ser Leu Leu Ser Pro Thr Phe Thr

20 25 30

agt gga aaa ctc aag gag gtatgaaaat aacatgagtt ttaataagaa 205

Ser Gly Lys Leu Lys Glu

35

acttaaagaa tgaatctggt ggggacaggt a

236

<210> 145

<211> 38
<212> PRT
<213> Homo sapiens

<400> 145
Pro Phe Gly Pro Val Gly Phe Met Lys Ser Ala Ile Ser Ile Ala Glu
1 5 10 15
Asp Glu Glu Trp Lys Arg Leu Gln Ser Leu Leu Ser Pro Thr Phe Thr
20 25 30
Ser Gly Lys Leu Lys Glu
35

<210> 146
<211> 379
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (188)..(274)

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aagccatgtc ctctgggac tagagtctgc acatttaact atgggtggtg ttgtgtttg 180
tgcttag atg gtc cct atc att gcc cag tat gga gat gtg ttg gtg aga 229
Met Val Pro Ile Ile Ala Gln Tyr Gly Asp Val Leu Val Arg
1 5 10
aat ctg agg cgg gaa gca gag aca ggc aag cct atc acc ttg aaa 274
Asn Leu Arg Arg Glu Ala Glu Thr Gly Lys Pro Ile Thr Leu Lys
15 20 25
gagtaagtag aagcgcagcc atgggggttct gagctgtcat gaaccctcc agctgcctgc 334
catggagctg atattcctgc tgttgggtta ttccagtgc cagac 379

<210> 147

<211> 29
<212> PRT
<213> Homo sapiens

<400> 147
Met Val Pro Ile Ile Ala Gln Tyr Gly Asp Val Leu Val Arg Asn Leu
1 5 10 15
Arg Arg Glu Ala Glu Thr Gly Lys Pro Ile Thr Leu Lys
20 25

<210> 148
<211> 379
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (188)..(274)

<400> 148
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gtacagaaaa cacatcacia aattcattat aaaatgtcac ttactgtccc atgctgggga 120
aagccatgtc cttctgggac tagagtctgc acatttaact atgggtgggtg ttgtgttttg 180
tgcttag atg gtc cct atc att gcc cag tat gga gat gtg ttg gtg aga 229
Met Val Pro Ile Ile Ala Gln Tyr Gly Asp Val Leu Val Arg
1 5 10
aat ctg agg cgg gaa gca gag aca ggc aag cct gtc acc ttg aaa 274
Asn Leu Arg Arg Glu Ala Glu Thr Gly Lys Pro Val Thr Leu Lys
15 20 25
cagtaagtag aagcgcagcc atgggggttct gagctgtcat gaaccctcc agctgcctgc 334
catggagctg atattcctgc tgttggggtta ttccagtgc cagac 379

<210> 149
<211> 29
<212> PRT
<213> Homo sapiens

<400> 149

Met Val Pro Ile Ile Ala Gln Tyr Gly Asp Val Leu Val Arg Asn Leu

1 5 10 15

Arg Arg Glu Ala Glu Thr Gly Lys Pro Val Thr Leu Lys

20 25

<210> 150

<211> 379

<212> DNA

<213> Homo sapiens

<400> 150

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gtacagaaaa cacatcacia aattcattat aaaatgtcac ttactgctcc atgctgggga 120
aagccatgct cttctgggac tagagtctgc acatttaact atgggtggtg ttgtgtttg 180
tgcttagatg gtcctatca ttgccagta tggagatgtg ttggtgagaa atctgaggcg 240
ggaagcagag acaggcaagc ctgtcacctt gaaagagtaa gtagaagcgc agctatgggg 300
ttctgagctg tcatgaacct ctccagctgc ctgccatgga gctgatattc ctgctgttgg 360
gttattccag tgaccagac 379

<210> 151

<211> 379

<212> DNA

<213> Homo sapiens

<400> 151

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gtacagaaaa cacatcacia aattcattat aaaatgtcac ttactgctcc atgctgggga 120
aagccatgct cttctgggac tagagtctgc acatttaact atgggtggtg ttgtgtttg 180
tgcttagatg gtcctatca ttgccagta tggagatgtg ttggtgagaa atctgaggcg 240
ggaagcagag acaggcaagc ctgtcacctt gaaagagtaa gtagaagcgc agccatgggt 300
ttctgagctg tcatgaacct ctccagctgc ctgccatgga gctgatattc ctgctgttgg 360
gttattccag tgaccagac 379

<210> 152

<211> 379

<212> DNA

<213> Homo sapiens

<400> 152

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gtacagaaaa cacatcacia aattcattat aaaatgtcac ttactgtccc atgctgggga 120
aagccatgtc cttctgggac tagagtctgc acatttaact atgggtggtg ttgtgtttg 180
tgcttagatg gtcctatca ttgccagta tggagatgtg ttggtgagaa atctgaggcg 240
ggaagcagag acaggcaagc ctgtcacctt gaaagagtaa gtagaagcgc agccatgggg 300
ttctgagctg tcatgaaccc ctccagcggc ctgccatgga gctgatattc ctgctgttg 360
gttattccag tgaccagac 379

<210> 153
<211> 431
<212> DNA
<213> Homo sapiens

<400> 153
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tagatttctc ttcatctaaa ctgtgatgcc ctacattgat ctgatttacc taaaatgtct 120
ttctctctct ttacgtcttg tccgatctgg agctcgtggc ccaatcaatt atctttattt 180
ttgctggcta tgaaccacg agcagtgttc tctcctcat tatgtatgaa ctggccactc 240
accctgatgt ccagcagaaa ctgcaggagg aaattgatgc agttttacc aataaggtga 300
gtggatgata catggagaag gagggaggag gtgaaacctt agcaaaaatg cctcctcacc 360
acttcccagg agaattttta taaaagcat aatcactgat tcttccactg actctatgta 420
ggaaggtct g 431

<210> 154
<211> 574
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (110)..(334)

<400> 154
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aagttaattc aaaatctcaa ttatccaaa tctgtttcgt tcttccag gca cca ccc 118
Ala Pro Pro
1

acc tat gat act gtg cta cag atg gag tat ctt gac atg gtg gtg aat 166
Thr Tyr Asp Thr Val Leu Gln Met Glu Tyr Leu Asp Met Val Val Asn
5 10 15

gaa atg ctc aga tta ttc cca att gct atg aga ctt gag agg gtc tgc 214
Glu Met Leu Arg Leu Phe Pro Ile Ala Met Arg Leu Glu Arg Val Cys

20 25 30 35

aaa aaa gat gtt gag atc aat ggg atg ttc att ccc aaa ggg gtg gtg 262
Lys Lys Asp Val Glu Ile Asn Gly Met Phe Ile Pro Lys Gly Val Val
 40 45 50

gtg atg att cca agc tat gct ctt cac cgt gac cca aag tac tgg aca 310
Val Met Ile Pro Ser Tyr Ala Leu His Arg Asp Pro Lys Tyr Trp Thr
 55 60 65

gag cct gag aag ttc ctc cct gaa aggtacaagg cccctgggaa gggagccctc 364
Glu Pro Glu Lys Phe Leu Pro Glu
 70 75

cctgaaccag cctggttcaa gcatattctg cctctcttaa tctacaggac agtcatgtgg 424

ttgtataatt atttgctgtg atttttatat ttagagattt ttttaatcat caaattgatt 484

attgtcacac ttacaaacc atagactaga aaaaagaaaa ctacagtcac ccacaattcc 544

aacaacttac gatgaaggtc atcagttatg 574

<210> 155

<211> 75

<212> PRT

<213> Homo sapiens

<400> 155

Ala Pro Pro Thr Tyr Asp Thr Val Leu Gln Met Glu Tyr Leu Asp Met
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Val Val Asn Glu Met Leu Arg Leu Phe Pro Ile Ala Met Arg Leu Glu
 20 25 30

Arg Val Cys Lys Lys Asp Val Glu Ile Asn Gly Met Phe Ile Pro Lys
 35 40 45

Gly Val Val Val Met Ile Pro Ser Tyr Ala Leu His Arg Asp Pro Lys
 50 55 60

Tyr Trp Thr Glu Pro Glu Lys Phe Leu Pro Glu
 65 70 75

<210> 156
<211> 574
<212> DNA
<213> Homo sapiens

<400> 156
cagtatgagt tagtctctgg agctcctaact acttcattag tactgcatgg actgagttaa 60
aagttaattc aaaatctcaa ttatccaaa tctgtttcgt tctttccagg caccaccac 120
ctatgatact gtgctacaga tggagtatct tgacatgggtg gtgaatgaaa cactcagatt 180
attcccaatt gctatgagac ttgagagggt ctgcaaaaaa gatgttgaga tcaatgggat 240
gttcattccc aaaggggtgg tggatgatgat tccaagctat gctcttcacc gtgacccaaa 300
gtactggaca gagcctgaga agttcctccc tgaaagggtac aaggcccctg ggaagggagc 360
cctccctgaa ccagcctggt tcaagcatat tctgcctctc ttaatctaca ggacagtcac 420
gtggttgat aattattgc ttgtatttt atatttagag attttttaa tcatcaaatt 480
gattattgtc acactttaca aaccatagac tagaaaaaag aaaactacag tcatccacaa 540
ttccaacaac ttacgatgaa ggtcatcagt tatg 574

<210> 157
<211> 574
<212> DNA
<213> Homo sapiens

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<221> CDS
<222> (110)..(334)

<400> 157
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aagttaattc aaaatctcaa ttatccaaa tctgtttcgt tctttccag gca cca ccc 118
Ala Pro Pro
1

acc tat gat act gtg cta cag atg gag tat ctt gac atg gtg gtg aat 166
Thr Tyr Asp Thr Val Leu Gln Met Glu Tyr Leu Asp Met Val Val Asn
5 10 15

gaa acg ctc aga tta ttc cca att gct atg aga ttt gag agg gtc tgc 214
Glu Thr Leu Arg Leu Phe Pro Ile Ala Met Arg Phe Glu Arg Val Cys
20 25 30 35

aaa aaa gat gtt gag atc aat ggg atg ttc att ccc aaa ggg gtg gtg 262
Lys Lys Asp Val Glu Ile Asn Gly Met Phe Ile Pro Lys Gly Val Val
40 45 50

gtg atg att cca agc tat gct ctt cac cgt gac cca aag tac tgg aca 310
 Val Met Ile Pro Ser Tyr Ala Leu His Arg Asp Pro Lys Tyr Trp Thr
 55 60 65

gag cct gag aag ttc ctc cct gaa aggtacaagg ccctgggaa gggagccctc 364
 Glu Pro Glu Lys Phe Leu Pro Glu
 70 75

cctgaaccag cctggttcaa gcatattctg cctctcttaa tctacaggac agtcatgtgg 424

ttgtataatt atttgcttgt atttttatat ttagagattt tttaaatcat caaattgatt 484

attgtcacac ttacaaacc atagactaga aaaaagaaaa ctacagtcac ccacaattcc 544

aacaacttac gatgaaggtc atcagttatg 574

<210> 158

<211> 75

<212> PRT

<213> Homo sapiens

<400> 158

Ala Pro Pro Thr Tyr Asp Thr Val Leu Gln Met Glu Tyr Leu Asp Met
 1 5 10 15

Val Val Asn Glu Thr Leu Arg Leu Phe Pro Ile Ala Met Arg Phe Glu
 20 25 30

Arg Val Cys Lys Lys Asp Val Glu Ile Asn Gly Met Phe Ile Pro Lys
 35 40 45

Gly Val Val Val Met Ile Pro Ser Tyr Ala Leu His Arg Asp Pro Lys
 50 55 60

Tyr Trp Thr Glu Pro Glu Lys Phe Leu Pro Glu
 65 70 75

<210> 159

<211> 574

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (110)..(334)

<400> 159

cagtatgagt tagtctctgg agctcctaatacttcattag tactgcatgg actgagtaa 60

aagttaattc aaaatctcaa ttatccaaa tctgttcgt tctttccag gca cca ccc 118

Ala Pro Pro

1

acc tat gat act gtg cta cag atg gag tat ctt gac atg gtg gtg aat 166

Thr Tyr Asp Thr Val Leu Gln Met Glu Tyr Leu Asp Met Val Val Asn

5

10

15

gaa acg ctc aga tta ttc cca att gct atg aga ctt gag agg gtc tgc 214

Glu Thr Leu Arg Leu Phe Pro Ile Ala Met Arg Leu Glu Arg Val Cys

20

25

30

35

aaa aaa gat gtt gag atc aat ggg atg ttc att ccc aaa ggg gtg gtg 262

Lys Lys Asp Val Glu Ile Asn Gly Met Phe Ile Pro Lys Gly Val Val

40

45

50

gtg atg att cca agc tat gct ctt cac cgt gac cca aag tac tgg aca 310

Val Met Ile Pro Ser Tyr Ala Leu His Arg Asp Pro Lys Tyr Trp Thr

55

60

65

gag cct gag aag ttc ctc ctt gaa aggtacaagg ccctgggaa gggagccctc 364

Glu Pro Glu Lys Phe Leu Leu Glu

70

75

cctgaaccag cctggttcaa gcatattctg cctctcttaa tctacaggac agtcatgtgg 424

ttgtataatt atttgctgtg atttttatat ttagagattt tttaaatcat caaattgatt 484

attgtcacac ttacaaacc atagactaga aaaaagaaaa ctacagtcac ccacaattcc 544

aacaacttac gatgaaggtc atcagttatg

574

<210> 160

<211> 75

<212> PRT

<213> Homo sapiens

<400> 160

Ala Pro Pro Thr Tyr Asp Thr Val Leu Gln Met Glu Tyr Leu Asp Met

1	5	10	15												
Val	Val	Asn	Glu	Thr	Leu	Arg	Leu	Phe	Pro	Ile	Ala	Met	Arg	Leu	Glu
	20				25				30						
Arg	Val	Cys	Lys	Lys	Asp	Val	Glu	Ile	Asn	Gly	Met	Phe	Ile	Pro	Lys
	35				40				45						
Gly	Val	Val	Val	Met	Ile	Pro	Ser	Tyr	Ala	Leu	His	Arg	Asp	Pro	Lys
	50				55				60						
Tyr	Trp	Thr	Glu	Pro	Glu	Lys	Phe	Leu	Leu	Glu					
	65				70				75						

<210> 161
 <211> 574
 <212> DNA
 <213> Homo sapiens

<400> 161
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 ctatgatact gtgctacaga tggagtatct tgacatgggtg gtgaatgaaa cgtcagatt 180
 attcccaatt gctatgagac ttgagagggt ctgcaaaaaa gatgttgaga tcaatgggat 240
 gtccattccc aaaggggtgg tggatgat tccaagctat gctcttcacc gtgacccaaa 300
 gtactggaca gagcctgaga agttcctccc tgaaggtac aaggctcctg ggaagggagc 360
 cctccctgaa ccagcctggt tcaagcatat tctgectctc ttaatctaca ggacagtcat 420
 gtggttgat aattattgc ttgtatttt atatttagag attttttaa tcatcaaatt 480
 gattattgtc acatttaca aaccatagac tagaaaaaag aaaactacag tcatccacaa 540
 ttccaacaac ttacgatgaa ggtcatcagt tatg 574

<210> 162
 <211> 411
 <212> DNA
 <213> Homo sapiens

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 ggggtattat gtcattaact tttaaaaat ctaccaatgt ggaaccagat tcagcaagaa 120
 gaacaaggac aacatagatc cttacatata cacaccctt ggaagtggac ccagaaactg 180
 cattggcatg aggtttgctc tcatgaacat gaaacttgct ctaacagag tccttcagaa 240
 cttctccttc aaaccttgta aagaacaca ggtagtcaa tttctataa aaataatgtt 300
 gtattaataa ttctttaac tgagtgggtc gtattttta aaaagaatat gcttgtttaa 360

tcttttacta atttgttctc tgggccaaag aatcaattag gcccatctgt g 411

<210> 163

<211> 288

<212> DNA

<213> Homo sapiens

<400> 163

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agaaaaaccc gttgttctaa aggttgagtc aagggatggc actgtaagtg gagcctgaat 180
tttctaagg acttctgctt tgctcttcaa gaaatctgtg cctgagaaca ccagagacct 240
caaataactt tgtgaataga actctgaaat gaagatgggc ttcacca 288

<210> 164

<211> 288

<212> DNA

<213> Homo sapiens

<400> 164

ggagtgtctc actcactttg atgctatact ttctactttt gtttatttaa tgcttctcaa 60
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agaaaaaccc gttgttctaa aggttgagtc aagggatggc accgtaagtg gagcctgaat 180
tttctaagg acttcggctt tgctcttcaa gaaatctgtg cctgagaaca ccagagacct 240
caaataactt tgtgaataga actctgaaat gaagatgggc ttcacca 288

<210> 165

<211> 236

<212> DNA

<213> Homo sapiens

<220>

<223> r=g or a

<400> 165

ctacaacct ggagacctcc acaactgatg taggacaaaa tgtttctgct ttgaactcta 60
gccttttggg ccagtgggat ttatgaaaag tgccatctct atagctgagg atgaagaatg 120
gaagagatta cratcattgc tgtctccaac cttcaccagt ggaaaactca aggaggtatg 180
aaaataacat gagttttaat aagaaactta aagaatgaat ctggtgggga caggta 236

<210> 166

<211> 379

<212> DNA

<213> Homo sapiens

<220>

<223> r=g or a, y=t or c, s=g or c, k=g or t

<400> 166

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gtacagaaaa cacatcacia aattcattat aaaatgtcac ttactgtccc atgctgggga 120
aagccatgtc cttctgggac tagagtctgc acatttaact atgggtggtg ttgtgtttg 180
tgcttagatg gtcctatca ttgccagta tggagatgtg ttggtgagaa atctgaggcg 240
ggaagcagag acaggcaagc ctrtcacctt gaaasagtaa gtagaagcgc agcyatgggk 300
ttctgagctg tcatgaacct ctccagckgc ctgccatgga gctgatattc ctgctgttg 360
gttattccag tgaccagac                                     379
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<210> 167

<211> 431

<212> DNA

<213> Homo sapiens

<220>

<223> r=g or a

<400> 167

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cccagtgtac ctctgaattg cttttctatt cttttccctt agggatttga gggcttcaact 60
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ttctctcct ttacgtctg tccgatctgg agctcgtggc ccaatcaatt atctttattt 180
ttgctggcta tgaaaccacg agcagtgttc tctccttcat tatgtatgaa ctggccactc 240
accctgatgt ccagcagaaa ctgcaggagg aaattgatgc agttttacc aataaggtga 300
gtggatgrta catggagaag gagggaggag gtgaaacctt agcaaaaatg cctcctcacc 360
acttccagg agaatttta taaaagcat aatcactgat tcttctact actctatgta 420
ggaaggetct g                                     431
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<210> 168

<211> 574

<212> DNA

<213> Homo sapiens

<220>

<223> y=t or c, r=g or a

<400> 168

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aagttaattc aaaatctcaa ttatccaaa tctgttcgt tcttccagg caccaccac 120
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ctatgatact gtgctacaga tggagtatct tgacatgggtg gtgaatgaaa yrctcagatt 180
attcccaatt gctatgagay ttgagagggt ctgcaaaaaa gatgttgaga tcaatgggat 240
gttcattccc aaaggggtgg tggatgatgat tccaagctat gctcttcacc gtgacccaaa 300
gtactggaca gagcctgaga agttcctccy tgaaagggtac aaggyccctg ggaagggagc 360
cctccctgaa ccagcctggt tcaagcatat tctgcctctc ttaatctaca ggacagtcac 420
gtggttgtat aattatttgc ttgtattttt atatttagag atttttttaa tcatcaaatt 480
gattattgtc acactttaca aacctagac tagaaaaaag aaaactacag tcatccacaa 540
ttccaacaac ttacgatgaa ggtcatcagt tatg 574

<210> 169

<211> 411

<212> DNA

<213> Homo sapiens

<220>

<223> y=t or c

<400> 169

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gaacaaggac aacatagatc cttacatata cacaccctt ggaagtggac ccagaaactg 180
cattggcatg aggtttgctc tcatgaacat gaaacttgct ctaatcagag tccttcagaa 240
cttctcttc aaaccttgta aagaacaca ggtagtcaa tttctataa aaataatgtt 300
gtattaataa ttcttttaac tgagtgggtc gtattttta aaaagaatat gcttgtttaa 360
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<210> 170

<211> 288

<212> DNA

<213> Homo sapiens

<220>

<223> y=t or c, k=g or t

<400> 170

ggagtgtctc actcacttg atgctatact ttctactttt gttatttaa tgcttctcaa 60
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agaaaaaccc gttgttctaa aggttgagtc aagggtggc acygtaatg gagcctgaat 180
tttctaagg acttckgctt tgctctcaa gaaatctgtg cctgagaaca ccagagacct 240
caaattactt tgtgaataga actctgaaat gaagatgggc ttcacca 288

<210> 171

<211> 30
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(30)

<400> 171
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Pro Val Thr Leu Lys His Val Phe Gly Ala
1 5 10

<210> 172
<211> 10
<212> PRT
<213> Homo sapiens

<400> 172
Pro Val Thr Leu Lys His Val Phe Gly Ala
1 5 10

1

41